

Appl. No. : 10/697,401
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REMARKS

Claims 1-22 and 27-29 are pending. Claims 23-26 are withdrawn. Claims 1, 12, 18, and 27 are amended herein.

Rejections Under 35 U.S.C. §102

Claims 1, 2, 18, 19, 27, and 28 are rejected under 35 U.S.C. §102(e) as being anticipated by Deaton et al., U.S. Patent No. 5,960,555. Applicants respectfully disagree that Claims 1, 2, 18, 19, 27, and 28 are anticipated by Deaton et al. Nevertheless, independent Claims 1, 12, 18, and 27 have been amended to recite veins substantially angled with respect to a radial direction. These amendments are fully supported by the specification, as originally filed, at, for example, paragraph [0050]. Applicants respectfully submit that these amendments do not add any new matter and do not require a new search.

The Examiner contends that Deaton et al. teach grooves that extend in an “approximately” radial direction and that the dictionary meaning of the word “approximate” is “not quite exact, but only slightly more or less in number or quantity” and that the Deaton et al. grooves would include angles varying from the radial direction. The Examiner’s dictionary interpretation of the term “approximately radial,” as used in Deaton et al., fails to give the term its intended meaning. Deaton et al. teach to provide grooves in the *radial* direction to provide *radial* gas flow. Deaton et al. teach away from providing grooves that are substantially angled with respect to a radial direction, as recited in amended Claims 1, 12, 18, and 27. Applicants submit that Deaton et al. teach away from precisely what is claimed – veins *substantially angled* with respect to a radial direction.

Deaton et al. teach that the grooves 182 extend in an approximately radial direction to provide flow paths (because the surface of ledge 164 creates a seal with the backside of the wafer) that allow the purge gas 147 to more easily flow between the substrate 106 and the supporting ledge 164 of the edge ring 134. *See* Deaton et al., at Col. 9, lines 55-61. Deaton et al. also teach that *radial* flow of purge gas is desirable because it “inhibits significant mixing of the purge gas 32 with the reaction gas 18 over the substrate upper surface 22,” thereby helping “to achieve a more uniform process profile out to the periphery of the upper surface 22 of the substrate 10.” *Id.*, at Col. 7, lines 5-18 (emphasis added). Deaton et al. also teach that a “greater

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number of grooves more closely spaced together around the ring may provide a more uniform outward **radial** flow of purge gas.” *Id.*, at Col. 9, line 67 – Col. 10, line 3 (emphasis added).

One of ordinary skill in the art would therefore understand that the Deaton et al. reference teaches the desirability of **radial** gas flow and would not find any suggestion of motivation in Deaton et al. for providing grooves that are substantially angled with respect to a radial direction as Deaton et al. suggest that grooves that are substantially angled with respect to the radial direction would inhibit the desired **radial** flow of gas. A person of ordinary skill following the teachings of Deaton et al. would orient the grooves in the radial direction to provide a radial gas flow path, and would not arrange the grooves at a substantial angle to the radial direction. Deaton et al. therefore do not teach veins that are substantially angled with respect to a radial direction, as recited in amended Claims 1, 12, 18, and 27.

Claims 1, 12, 18, and 27, as amended, are therefore patentable as they are not anticipated by Deaton et al. Claims 2, 19, and 28, which depend from and include all of the limitations of amended Claim 1, 12, 18, or 27, are therefore also patentable over Deaton et al. Furthermore, each of the dependent claims recites further distinguishing features of particular utility.

Rejections Under 35 U.S.C. §103

Claims 3-17 and 20-22 are rejected under 35 U.S.C. §103(a) as being unpatentable over Deaton et al. in view of Goodman, US PG PUB No. 2003/0198910. As discussed above, Deaton et al. do not teach veins that are substantially angled with respect to a radial direction. Similarly, there is no teaching or suggestion in Goodman of veins that are substantially angled with respect to a radial direction, as recited in amended Claims 1 and 18. Claims 3-17 and 20-22, which depend from and include all of the limitations of amended Claim 1 or 18, are therefore patentable over Deaton et al. and Goodman, either alone or in combination. Furthermore, each of the dependent claims recites further distinguishing features of particular utility.

Conclusion

Applicants respectfully submit that all of the pending claims are patentably distinguishable over the prior art of record. The cited references, either alone or in combination, do not teach or suggest Applicants’ claimed invention.


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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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AMEND

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